

Virginia Department of Corrections

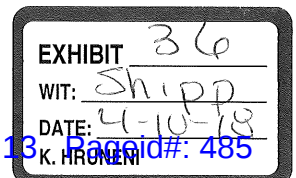
Guideline for Chronic Hepatitis C Diagnosis/Management

I. Introduction

This guideline reviews the diagnosis of Hepatitis C as well as the process for referring offenders who have been diagnosed with chronic Hepatitis C for curative treatment with Direct Acting Antiviral drugs. It does not address all aspects of the medical management of offenders with Chronic Active Hepatitis C. The Virginia Department of Corrections (VADOC) has an MOA with the VCU Medical Center Hepatology group to evaluate and provide medications for treatment with Direct Acting Antiviral drugs for Chronic Hepatitis C Infection. Management of Hepatitis C takes place over telemedicine by a Nurse Practitioner employed at VCU Medical Center. Requests for approval to refer for treatment should be sent by email to the Chief Physician. A response will be sent by email indicating whether or not the offender is approved for referral. Offenders with more advanced liver disease will be approved for treatment. This will be determined by the AST Platelet Ratio Index (APRI) and/the Fib-4 score. The formula for calculating the APRI and the Fib-4 score is given in section IV below. Offenders who have indeterminate APRI/FIB-4 results will require additional testing to determine severity of their liver disease. The decision to initiate treatment will be based on HCV disease severity, demonstration of willingness to avoid at risk behavior, and having sufficient time remaining in the VADOC to complete the evaluation, treatment, and follow-up. A subset of offenders with decompensated cirrhosis who have controlled ascites and/ or controlled encephalopathy are eligible for treatment while offenders with more advanced decompensation are not eligible for treatment. See section IV for details on which offenders with decompensated cirrhosis are eligible for treatment.

When treatment is approved, it will take place at a facility with 24-hour Nursing staff so the medication can be given by Directly Observed Therapy. Individuals who will undertake medication treatment will be transferred to one of these facilities for the duration of treatment. Transfer should not be arranged until treatment has been approved/ or recommended by the consultant and the offender agrees to be treated. Once treatment has started, a medical hold should be placed so the offender will not transfer during treatment.

Information regarding medications and treatment regimens used to treat Hepatitis C are outlined in the American Association for the Study of Liver Disease (AASLD) Recommendations for Testing, Managing, and Treating Hepatitis C.



- II. Diagnosis
 - A. Antibody Test—Tests for anti-HCV antibodies is the first screening test that should be done to evaluate for HCV Infection.
 - 1. If this is negative then no further evaluation is needed except as noted in #2.
 - 2. If the offender may have been exposed to Hepatitis C in the past 6 months, repeat HCV AB test in 6 months.
 - 3. If the offender is Immune Compromised, check HCV RNA in addition to HCV Ab test.
 - B. HCV RNA Assay—this should be done if the HCV Antibody test is positive or if the patient has a reason for a false-negative antibody test such as immune compromise. A Quantitative HCV RNA Assay should be performed as this is more sensitive than a qualitative assay.
 - C. Interpretation-
 - 1. A positive HCV RNA Assay confirms the presence of hepatitis C genetic material and confirms the presence of chronic infection.
 - 2. A positive Antibody test with a negative HCV RNA Assay suggests prior infection that has cleared spontaneously or with prior treatment, or a false-positive antibody test. A quantitative HCV RNA assay should be repeated in 6 months to confirm absence of infection.
- III. Screening for Hepatitis C
 - A. Screening for Hepatitis C should take place in the following cases:
 - 1. Offenders who are incidentally found to have abnormal liver enzymes at intake or at other times when abnormal liver enzymes are identified.
 - 2. Upon offenders request when they present and report risk factors including history of IV drug use, HIV or AIDS infection, multiple sex partners, received donated blood prior to 1992, liver disease is present, offender reporting blood exposure, offenders on hemodialysis, tattoos or piercings in prison or other uncontrolled setting, or any circumstance judged by the treating physician to put the offender at increased risk for Hepatitis C.
- IV. Inclusion Criteria for consideration of treatment
 - A. HCV RNA positive
 - B. Offenders who enter the VADOC already on treatment for Hepatitis C will be continued on treatment until it is determined that treatment should be discontinued for reasons outlined in this guideline. These offenders should be referred to the VCU Medical Center Hepatitis C Telemedicine Clinic for management.
 - C. Referral for treatment based on AST Platelet Ratio Index and the Fib-4:**
 - 1. $APRI \geq 1.5$ AND $FIB-4 \geq 3.25$, then prioritize referral for treatment evaluation.
 - 2. If $APRI \geq 0.5$ and < 1.5 OR $FIB-4 \geq 1.45$ and < 3.25 (Indeterminate group)
 - a. Refer to VCU Hepatology for a Fibroscan if your facility is in the Central or Eastern Region.

- b. Refer to Pocahontas State Correctional Center for a FibroScan if your facility is in the Western Region. If your facility is in the Western Region but closer to VCU Medical Center, then refer the offender to VCU for Fibroscan. To schedule a FibroScan at PSCC call (276) 945-2833.
 - c. If the E(kPa) Median score on the FibroScan is ≥ 9.1 the offender should be referred to VCU Medical Center Telemedicine clinic for treatment evaluation. If that is the case, email the Chief Physician for approval to refer the offender.
 - d. If the E(kPa) Median Score is ≤ 9.0 , treatment should be deferred and the offender should be monitored according to section XIII below.
 - 3. If APRI is < 0.5 AND FIB-4 is < 1.45 , defer treatment and follow per section XII below.
 - 4. Offenders with Decompensated Cirrhosis who satisfy the following criteria are eligible for treatment referral and should be referred to the Hepatitis C Telemedicine Clinic:
 - a. Child-Turcotte-Pugh Class A or B (See Below)
 - b. MELD Score ≤ 12 (See Below)
 - 5. Offenders with Decompensated Cirrhosis with Child-Turcotte-Pugh Class C or a MELD score >12 are not eligible for treatment. These offenders can be medically managed by the institutional provider or referred to VCU Hepatology clinic for medical management as deemed appropriate by the institutional provider.
- D. Regardless of category in section IV.B. above, refer offender for consideration of treatment if there are other findings suggestive of advanced liver disease such as low albumin or Platelets, or elevated bilirubin or INR, or if there are extra-hepatic conditions that warrant treatment, such as symptomatic cryoglobulins, debilitating fatigue.
- E. Offenders with at least 9 months remaining on their sentence at the time of treatment initiation. Offenders should be advised of this requirement. Those with less than two years remaining on their sentence at the time of initiation of work-up should be advised that, because of the time required to completed the work-up and schedule appointments, and have appropriate follow-up after treatment, it is possible there will not be enough time to treat them once it has been determined they are eligible for treatment. Those offenders who cannot be treated and who are indigent and a Virginia resident, may be eligible for treatment at no cost through the Virginia Coordinated Care Program at VCU Medical Center. The contact number for this program is (804) 828-0966. Offenders who cannot be treated due to release date should be provided this number to call once they are released to find out if they are eligible for treatment through the program.
- Offenders who are parole eligible can be considered for treatment referral.
- F. Completion of the pre-treatment evaluation.

- G. Offenders who are willing to adhere to a rigorous treatment regimen and demonstrate a willingness to abstain from high-risk behavior while incarcerated.
- H. Offender should have shown good compliance with previously prescribed medication regimens. Offenders on chronic non-PRN medications should be considered in good compliance if they have taken 80% of the doses each month for 3 months prior to initiating the work up. They should remain in good compliance while waiting for the appointment.
- I. Liver Transplant Recipients—these offenders should be referred to the VCU Medical Center Offender Hepatology clinic for evaluation and recommendations.
- J. Offenders with HIV and/or chronic Hepatitis B co-infection will be evaluated and approved for referral using the same criteria as offenders without co-infection. Offenders co-infected with Chronic Active Hepatitis B may require treatment for that condition as well and if that is the case, will be referred to the Hepatology clinic for management.
- K. **Once an offender has been approved for referral to the VCU Hepatitis Telemedicine Clinic, they should be referred for a Liver Ultrasound to screen for Hepatocellular Carcinoma.** The ultrasound report should be forwarded to VCU Telemedicine Coordinator to be placed with the offenders file.

****Calculation of the APRI:**

$$(AST \div ULN) \times 100 \div \left(Platelet\ Count \times \frac{10^3}{uL} \div 1000 \right)$$

****Calculation of FIB-4:**

$$(Age \times AST) \div [(Platelet\ count \times 10^3/uL \div 1000) \times Sq\ Root\ of\ ALT]$$

Note that FIB-4 Calculator can be found online at:

<http://www.hepatitisc.uw.edu/page/clinical-calculators/fib-4>

MELD Calculator can be found online at:

<http://www.mdcalc.com/meld-score-model-for-end-stage-liver-disease-12-and-older/>

Child-Turcotte-Pugh (CTP) Calculator

This calculator is used for the classification of the severity of cirrhosis

	Points*		
	1	2	3
Encephalopathy	None	Grade 1-2 (or precipitant-induced)	Grade 3-4 (or chronic)
Ascites	None	Mild/Moderate (diuretic-responsive)	Severe (diuretic-refractory)
Bilirubin (mg/dL)	<2	2-3	>3
Albumin (g/dL)	>3.5	2.8-3.5	<2.8
PT (sec prolonged) or INR	<4 <1.7	4-6 1.7-2.3	>6 >2.3

CTP class (add score for each parameter):

A= 5-6 points

B= 7-9 points

C= 10-15points

V. Exclusion criteria

- A. Less than 9 months remaining on sentence at the time of treatment initiation. Parole eligibility doesn't exclude an offender from treatment consideration on the basis of this criteria.
- B. Founded charges during incarceration for the past 2 years, or documented use of alcohol or illegal injection drugs or other illegal substances known to contribute to progression of liver disease.
- C. Founded charges for tattoos (intradermal), or offender self-reporting of new tattoos, or medical documentation of new tattoos, in the past 2 years during incarceration.
- D. Exceptions to B and C will be considered on a case-by-case basis depending on the severity of disease.
- E. APRI < 0.5 AND FIB-4 < 1.45 without significant extra-hepatic conditions associated with HCV.

VI. Initial Laboratory Evaluation

- A. CBC
- B. CMP
- C. PT/INR
- D. Anti-HIV
- E. Quantitative HCV RNA(Viral Load)
- F. HCV Genotype

- G. Calculated GFR
 - H. HgbA1C, and TSH if Genotype 3 or Genotype 5
 - I. Serum Pregnancy Test in women
 - J. Anti-HAV total, HBsAg, HBsAb, and HBcAg(IgG) if not done with original hepatitis screening.
 - K. Consider testing for other liver conditions as appropriate (ANA, ASMA, A1AT, Iron Panel and Serum Ferritin, ceruloplasmin).
 - L. Offenders with documented cirrhosis should have a liver ultrasound every 6 months to evaluate for hepatocellular carcinoma as well as periodic upper endoscopy to evaluate for esophageal varices.
- VII. Prior to Initiating Treatment(after treatment recommended by the Hepatitis C Telemedicine Clinic Nurse Practitioner)
- A. Offender should be transferred to a facility with 24-hour Nursing for Directly Observed Therapy. A medical hold should be placed on the offender once they are at the facility where they will be treated. The hold can be cancelled once treatment is complete.
 - B. Hepatitis A and Hepatitis B Vaccines
 - 1. All Hepatitis C positive offenders should be offered Hepatitis A and Hepatitis B Vaccine if not immune.
 - 2. Hepatitis A Vaccine and Hepatitis B Vaccine should be administered and immunization documented as outlined in the Virginia Department of Corrections Standard Treatment Guideline for Hepatitis A(HAV) Immunization and Treatment, and the Standard Treatment Guideline for Hepatitis B(HBV) Immunization and Treatment, respectively.
 - C. Make sure Hepatitis C Treatment Consent form is signed by **all** offenders (**Attachment 3**).
- VIII. Monitor at the Facility During Treatment
- A. Follow regularly in clinic to ensure compliance, monitor adverse events and potential drug interactions with new prescriptions.
 - B. Any non-compliance with treatment should be reported to the Nurse Practitioner at the Hep C Telemed Clinic. The Nurse Practitioner is Reena Cherian, and she can be reached at (804) 828-9663.
 - C. Make sure all labs are ordered as instructed by the Nurse Practitioner at the VCU Hepatitis C Telemedicine Clinic. The timing of drawing labs should coincide with the start date of the medication and not with the date of the clinic appointment.
 - D. Consider ordering the medication to be given in the morning or in the evening based on offender preference to improve compliance.
 - E. Whenever there are medication doses leftover at the end of treatment (due to non-compliance or other reason) continue the medication until all doses are taken, unless otherwise instructed by the Nurse Practitioner in the Hep C Telemed Clinic.

- F. If parole is granted during treatment medical should recommend that the offender not be released until treatment is completed.
- IX. Request for Approval to Refer for treatment—Fax or email the following information to the VADOC Chief Physician, [fax #(804)674-3551]:
- A. All lab results as listed in section V. Pretreatment Labs(performed within the previous 12 weeks). If any requested labs are omitted the request will not be processed. Submit lab results to the Chief Physician using the Hepatitis C Treatment Worksheet **(Attachment 3)**
 - B. A completed Hepatitis C Treatment Request form. **(See Attachment 1)**
 - C. FibroScan report if done
 - D. A response to the request will be sent by email.
- X. Discontinuation of Treatment
- A. The decision to discontinue treatment will generally be made by the VCU HepC Telemed Nurse Practitioner and treatment should not be discontinued without first discussing with the VCU Hep C Telemedicine Clinic Nurse Practitioner. (Reena Cherian at (804) 828-9663.)
 - B. Reasons to discontinue treatment:
 1. A ≥ 10 -fold increase in ALT at week 4 or beyond of treatment. Call VCU Hepatitis C Telemedicine Nurse Practitioner right away to discuss.
 2. Any increase in ALT of < 10 -fold at week 4 if accompanied by any weakness, nausea, vomiting, jaundice or by an increased bilirubin, Alkaline Phosphatase, or PT/INR.
 3. NON-RESPONSE to treatment:
If the quantitative HCV RNA is detectable at week 4 this should be repeated in 2 weeks. If quantitative HCV RNA has increased by > 10 -fold($> 1 \log_{10}$ IU/mL) on repeat at 6 weeks or later, treatment should be discontinued due to treatment failure. If there is a < 10 -fold increase in HCV RNA at week 6, do not stop treatment but repeat HCV RNA in another 2 weeks. If there is a < 10 -fold increase in HCV RNA at week 6 or week 8, do not discontinue treatment.
 4. If a new tattoo appears or offender receives a founded tattoo charge.
 5. If a positive drug screen is reported.
 6. If a blood alcohol test is positive.
 7. If an offender on Hepatitis C treatment has a founded charge for tattoos, drug or alcohol use, before discontinuing treatment, this must be discussed with the Chief Physician. Decisions regarding discontinuation of treatment in these circumstances will be made on a case-by-case basis with discussion between the treating Institutional Physician the VADOC Chief Physician, and the VCU Hepatitis C Telemedicine Clinic Nurse Practitioner.
 8. If offender demonstrates non-compliance with medication.
- XI. Monitoring Offenders Who are not a Candidate for Treatment

- A. Most offenders who are not eligible for treatment can be monitored once per year.
- B. Offenders with HIV or other immunocompromised condition, or with Genotype 3 disease, should be monitored every 6 months.
- C. Monitoring should include clinical evaluation and CMP, CBC, PT/INR and calculation of APRI and FIB-4. Refer for treatment as indicated if disease progresses.
- D. For offenders who fall into and remain in the indeterminate group (section IV.C.2 on page 2) a FibroScan should be done every 3 years even if other labs do not suggest disease progression.

XII. Work Assignments

- a. Those who test positive for HCV have no work restrictions.

Signature on file

Mark Amonette, MD Chief Physician

Revised 06/16

Revised 6/17

REFERENCES

American Association for the Study of Liver diseases and the Infectious Diseases Society of America. 2015

CDC: Hepatitis C Information on Testing & Diagnosis. www.cdc.gov/hepatitis
October 2013

FDA Drug Safety Communication: FDA warns about risk of Hepatitis B reactivating in some patients treated with direct acting antivirals for Hepatitis C

<https://www.fda.gov/drug/drugsafety/ucm522932.htm>

Interim Guidance for the Management of Chronic Hepatitis C Infection.

Federal Bureau of Prisons, Clinical Practice Guideline. June 2014.

http://www.bop.gov/resources/health_care_mngmt.jsp.

Medication Adherence: WHO CARES?

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068890/>

Recommendations for Testing, Managing, and Treating Hepatitis C. At

<http://www.hcvguidelines.org/>.

Standard Treatment Guideline, Hepatitis C. Commonwealth of Virginia, Department of
Corrections. February 18, 2004.

Hepatitis C Referral Request

Offender Name	DOB	DOC ID#	Date
		YES NO N/A	
1.	Does the offender have a least 9 months remaining on his/her sentence?		___ ___
2.	Has the offender received a charge for use of alcohol or illegal drugs in the past 2 years?		___ ___
3.	Has the offender received a charge for tattoos in the past 2 years?		___ ___
4.	Does the offender have clinical signs/symptoms of decompensated Cirrhosis (Ascites, Encephalopathy, Esophageal Varices)?		___ ___
5.	If "yes" to # 4, What is the offenders Child-Turcotte-Pugh Class And MELD score		_____ _____
6.	Is the offender pregnant?		___ ___ ___
7.	What is the APRI Score? $[(AST \div ULN) \times 100 \div (Plt\ Ct \times 10^3 / uL \div 1000)]$		_____
8.	What is the FIB-4 Score? $(Age \times AST) \div [(Plt\ count \times 10^3 / uL \div 1000) \times Sq\ Rt\ of\ ALT]$		_____
9.	Does the offender have an uncontrolled major illness (eg. HTN, DM, CAD, CHF, Asthma, COPD, Thyroid Ds or other)? Specify: _____		
10.	Has the offender been compliant with previously prescribed medications?		___ ___
11.	List any other medical conditions the offender has: _____ _____ _____		

Fax or email this completed form along with the following labs to the VADOC Medical Director [fax# (804)674-3551]: CBC, CMP, PT/INR, HIV, HCV Viral Load, HCV Genotype, and Calculated GFR. If Genotype 3 include: TSH, HgbA1C. Any omitted information will constitute an incomplete request which will not be processed.

Person completing form (print)

Facility

Contact Phone #

Hepatitis C Treatment Consent

Patient Initial each:

- ___1. I understand that treatment may be of no benefit and may not get rid of my Hepatitis C Infection.
- ___2. I understand that my medication treatment may be different than the treatment of another offender and will be determined by specific circumstances related to my infection(such as Genotype, presence of cirrhosis, past treatment history).
- ___3. I understand that if my labs during treatment indicate that I am not responding to treatment or if I have certain abnormal labs, my treatment may be stopped early.
- ___4. I understand that I will require regular blood work to be drawn during treatment to monitor side effects or response to treatment and that I need to cooperate with having blood drawn. Also, that failure to cooperate with having blood work done may result in discontinuation of treatment.
- ___5. I understand that I must not become pregnant or attempt to impregnate my partner during my Hepatitis C antiviral treatment or for 6 months after stopping treatment. Also, that I must use two forms of birth control during heterosexual activity while taking the medication and for 6 months after the medication is stopped. Ribavirin can cause fetal abnormalities and death.
- ___6. I understand that my failure to comply with the medication, blood testing, or regular appointments may result in my provider stopping the medication treatment.
- ___7. I understand that drinking alcohol is forbidden and causes injury to the liver.
- ___8. I understand that I must not be involved in any activity that may transmit the Hepatitis C virus including tattooing, sexual activity in prison, IV drug use, intranasal drug use. Being involved in any of these activities may result in loss of eligibility for treatment or stopping treatment that has been started.
- ___9. I understand that I may be required to undergo random blood or urine testing for illegal substances and that a positive test may result in stopping, or loss of eligibility to take the Hepatitis C medications.
- ___10. I understand that completion of this agreement does not guarantee that I will be approved for Hepatitis C treatment.
- ___11. My initials above and signature below signify my understanding of /and agreement to comply with the requirements. I understand that failure to comply with the requirements may result in loss of eligibility for treatment or in discontinuation of treatment already in progress.
- ___12. I understand that if I am not at a 24-hour Nursing facility I will have to be transferred to a 24-hour facility while I am taking medication for Hepatitis C.

Attachment 2 (cont.)

___13. I understand that if I take treatment and am cured of my Hepatitis C infection, this will **not** protect me from becoming re-infected if I participate in risky behavior such as IV drug use, getting tattoos, or having sex with an infected person.

___14. I understand that if I have Hepatitis B Infection there have been reports of reactivation of Hepatitis B during antiviral treatment for Hepatitis C, including cases of Fatal Fulminant Hepatitis.

___15. I understand that I need to have at least 9 months remaining on my time in the Virginia Department of Corrections at the time I start taking medication for Hepatitis C in order to be eligible for treatment. This is because there needs to be adequate time to take the treatment and to be followed-up after treatment. Therefore, if I have less than 2 years left on my sentence there may not be adequate time to complete the evaluation and schedule an appointment to meet the 9 month deadline.

Patient Name _____ Clinician Name _____

Signature _____ Date _____ Signature _____ Date _____

Hepatitis C Treatment Worksheet

1. Name: _____ DOC#: _____ DOB: _____
2. DOI: _____ DOR: _____ Less than 9 months left in VADOC: Y N
3. Date diagnosed: _____ Previous HCV Treatment Y N Date: _____
Type: Interferon Pre-Intro/Ribovarin
4. HCV Genotype: _____ HCV Viral Load: _____ Date: _____
5. APRI: _____ Date: _____ Note: <5(No Fibrosis); >1.5(Cirrhosis); 0.5-1.5(Progressive Fibrosis)
6. Fib-4 Score: _____
7. WBC: _____ Hgb: _____ Hct: _____ Plt: _____ PT: _____ INR: _____ Date: _____
8. AST: _____ ALT: _____ ALKPPOS: _____ T.Bili: _____ Albumin: _____ Date: _____
9. AFP: _____ ANA: _____ Transferrin: _____ HBA1C(diabetic): _____ Date: _____
10. BUN: _____ CREAT: _____ GFR: _____ Na: _____ K: _____ Amylase: _____ Date: _____
11. HIV: _____ Anti-HAVIgG: _____ HBsAg: _____ HBsAB: _____ Date: _____
12. Medical History (Circle all that apply) DM HTN CAD CHF COPD Asthma HBV HIV Cancer
Kidney Dz Thyroid
13. Medical History(write in additional): _____
14. Mental Health Diagnosis: _____ Code: _____

15. HAV Vaccine Y / N HBV Vaccine Y / N
16. HCV Treatment Consent Form Signed Y / N
17. Prepared by: _____ Date: _____
18. Fax to VADOC Medical Directory-Dr. Amonette at (804) 674-3551 Date: _____

**APRI Calculator (AST/ULN=X; X/PLT=Y; Y x 100=APRI)